SLOVENSKI STANDARD
SIST EN 4132:2009
01-oktober-2009

Aeronavtika - Sorniki, normalna šestroba glava, široka toleranca, dolg navoj, iz legiranega jekla, kadmirani - Klasifikacija: 1100 MPa (pri temperaturi okolice)/235 ° C

Aerospace series - Bolts, normal hexagonal head, coarse tolerance normal shank, long thread, in alloy steel, cadmium plated - Classification: 1100 MPa (at ambient temperature)/235 °C

Luft- und Raumfahrt - Sechskantschrauben, langes Gewinde, aus legiertem Stahl, verkadmet - Klasse: 1100 MPa (bei Raumtemperatur)/235 °C

Série aérospatiale - Vis à tête hexagonale normale, tige normale à tolérance large, filetage long, en acier allié, cadmiées - Classification: 1100 MPa (à température ambiante)/235 °C

Ta slovenski standard je istoveten z: **EN 4132:2009**

ICS:

49.030.20 Sorniki, vijaki, stebelni vijaki Bolts, screws, studs

SIST EN 4132:2009 **en,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4132

July 2009

ICS 49.030.20

English Version

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 4132:2009: E

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Foreword

This document (EN 4132:2009) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

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1 Scope

This standard specifies the characteristics of bolts, normal hexagonal head, coarse tolerance normal shank, long thread, in alloy steel, cadmium plated.

Classification: 1 100 MPa [1] / 235 °C [2]

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2133, *Aerospace series — Cadmium plating of steels with specified tensile strength ≤ 1 450 MPa, copper, copper alloys and nickel alloys.*

EN 2137, *Steel FE-PL75 — 1 100 MPa ≤ R_m ≤ 1 250 MPa — Bars D_e ≤ 100 mm — Aerospace series.* [3]

EN 2424, *Aerospace series — Marking of aerospace products.*

EN 3514, *Aerospace series — Steel FE-PL711 — Hardened and tempered — 1 100 ≤ R_m ≤ 1 300 MPa — Bar and wire for bolts — D_e ≤ 25 mm.* [4]

EN 9100, *Aerospace series — Quality management systems — Requirements (based on ISO 9001:2000) and Quality systems — Model for quality assurance in design, development, production, installation and servicing (based on ISO 9001:1994).*

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts.*

TR 3775, *Aerospace series — Bolts and pins — Materials.* [5]

ISO 3353-1, *Aerospace — Lead and runout threads — Part 1: Rolled external threads.*

ISO 5855-2, *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts.*

ISO 7689, *Aerospace — Bolts, with MJ threads, made of alloy steel, strength class 1 100 MPa — Procurement specification.*

ISO 7913, *Aerospace — Bolts and screws, metric — Tolerances of form and position.*

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1) Minimum tensile strength of the material at ambient temperature.

2) Maximum temperature that the bolt can withstand without continuous change in its original characteristics, after return to ambient temperature. The maximum temperature is determined by the surface treatment.

3) Published as ASD Standard at the date of publication of this standard.

4) Published as ASD Prestandard at the date of publication of this standard.

5) Published as ASD Technical Report at the date of publication of this standard.

3 Required characteristics

3.1 Configuration — Dimensions — Masses

See Figure 1 and Table 1.

Dimensions and tolerances are expressed in millimetres and apply after surface treatment.

3.2 Tolerances of form and position

ISO 7913

3.3 Materials

EN 2137, EN 3514

or

TR 3775 (alloy steel, classification 1 100 MPa)

3.4 Surface treatment

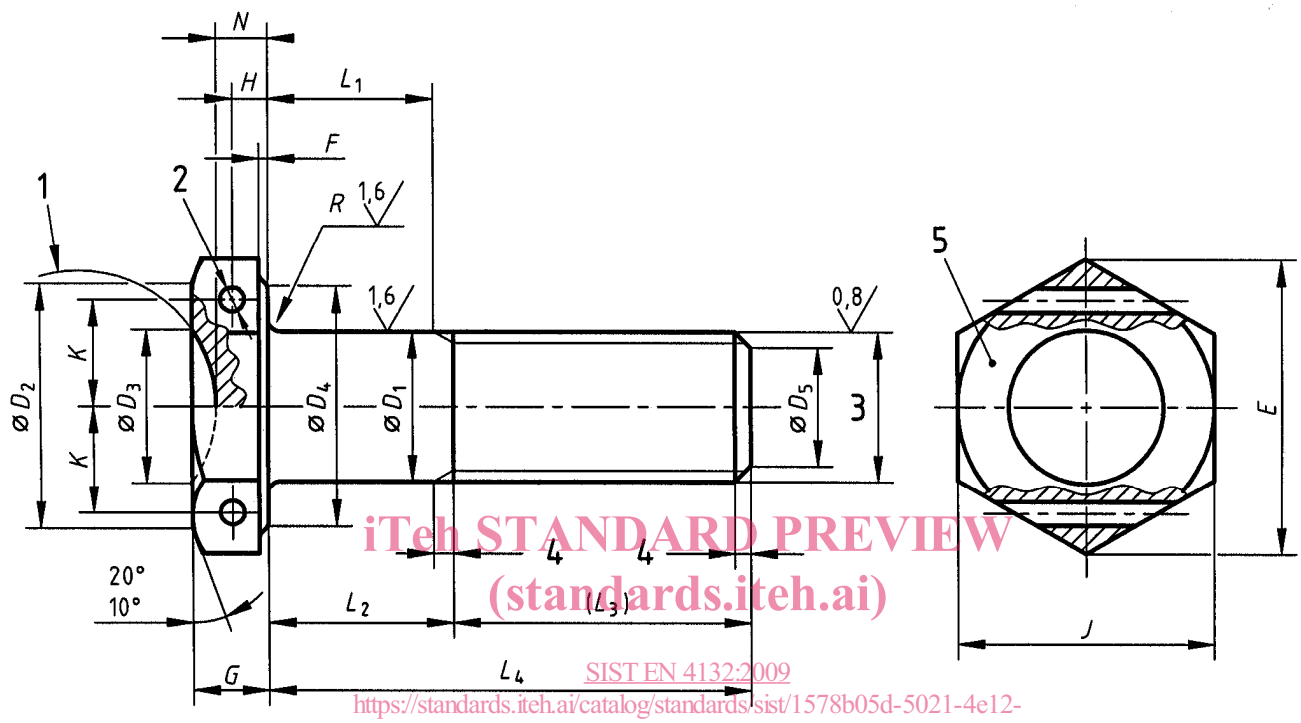
EN 2133, 8 µm to 14 µm on all surfaces which can be contracted by a 20 mm diameter ball. On all other surfaces, a continuous cadmium plating shall be present, but no value is specified.

Black colour option: code B

3,2 [0,8 1,6] Values in micrometres apply prior to surface treatment.

Break sharp edges 0,1 to 0,4.

Details of form not stated are left to the manufacturer's discretion



Key

1 Continuous surface
2 2 holes $\varnothing D_6$ optional
3 Thread
4 Conforms to ISO 3353-1
5 Marking

Figure 1

Table 1

Diameter code	Thread [a]	D_1 h12	D_2 min.	D_3 0 / − 0,5	D_4 [b] min.	D_5 nom.	D_5 Tol.	D_6 H13	D_7 H13	E min.	F max.	F min.	G 0 / − 0,3
030	MJ3×0,5 - 4h6h	3	5,5	—	5,4	2,3	0 / − 0,5	—	—	6,5	0,4	0,2	2
040	MJ4×0,7 - 4h6h	4	6,4	—	6,4	3		—	1,1	7,6	0,5		2,5
050	MJ5×0,8 - 4h6h	5	7,4	5,25	7,4	3,4	± 0,5	1	1,5	8,7			3
060	MJ6×1 - 4h6h	6	9,4	6,25	9,3	4,2		1,4		10,9			3,5
070	MJ7×1 - 4h6h	7	10,3	7,25	10,2	5,2			1,9	12			4
080	MJ8×1 - 4h6h	8	12,3	8,25	12,2	6,2				14,3			4,5
100	MJ10×1,25 - 4h6h	10	16,3	10,25	16	7,9		1,6	2,4	18,9	0,6	0,3	5
120	MJ12×1,25 - 4h6h	12	18,3	12,25	18	9,8				21,1			6
140	MJ14×1,5 - 4h6h	14	21,3	14,25	21	11,5			3	24,5			7
160	MJ16×1,5 - 4h6h	16	23,3	16,25	23	13,5				26,8			8
180	MJ18×1,5 - 4h6h	18	26,3	18,25	26	15,5			3,8	30,2			9
200	MJ20×1,5 - 4h6h	20	29,3	20,25	29	17,5				33,6			10

Diameter code	H	J nom.	J Tol.	K	L_1 [c, d, e] min.	L_2 [c, d, e] max.	L_3	L_4 [e, f] Length code	L_4 [e, f] nom.	N 0 / − 0,3	R max.	R min.	Mass [g] h	Mass [g] i
030	—	6	h12	—	0,4	2	12	014 to 042	14 to 42	—	0,4	0,2	1,201	0,110
040	—	7		—			14	016 to 056	16 to 56	—			2,101	0,198
050	1,35	8		3,25	0,5	4	16	020 to 070	20 to 70	2	0,5	0,3	3,772	0,306
060	1,6	10		4,1			18	022 to 084	22 to 84	2,3	0,7	0,5	6,823	0,444
070	1,85	11		4,5	0,7		20	024 to 098	24 to 98	2, 7			9,380	0,604
080	2,1	13		5,35			22	026 to 112	26 to 112	3			14,331	0,790
100	2,35	17	h13	7,1	0,8	6	25	032 to 140	32 to 140	3,4	0,8	0,6	27,531	1,232
120	2,85	19		7,9	0,9		30	036 to 168	36 to 168	4	0,9		44,482	1,774
140	3,35	22		9,2	1,1		34	040 to 196	40 to 196	4,7	1,1	0,8	66,445	2,416
160	3,85	24		10,05			38	044 to 224	44 to 224	5,4			97,498	3,156
180	4,35	27		11,3	1,3		42	048 to 252	48 to 252	6	1,3	1	136,684	3,994
200	4,85	30		12,6			46	052 to 280	52 to 280	6,7			185,948	4,932

[a] In accordance with ISO 5855-2.

[b] D_4 max. shall be less than J.

[c] First length corresponding to first L_4 length.

[d] Condition L_1 min. and L_2 max. cannot be obtained simultaneously.

[e] Increments:
- 2 for $L_4 \leq 100$;
- 4 for $L_4 > 100$.

[f] If greater lengths are required, they shall be chosen using the above increments. The length code corresponds to the length L_4, completed by one or two zeros to the left, where necessary, to obtain a three digit code.

[g] Approximate values (kg/1 000 pieces), calculated on the basis of 7,85 kg/dm^3, given for information purposes only. They apply to bolts without holes.

[h] Value for head and first L_4.

[i] Increase for each additional 2 mm of L_4.